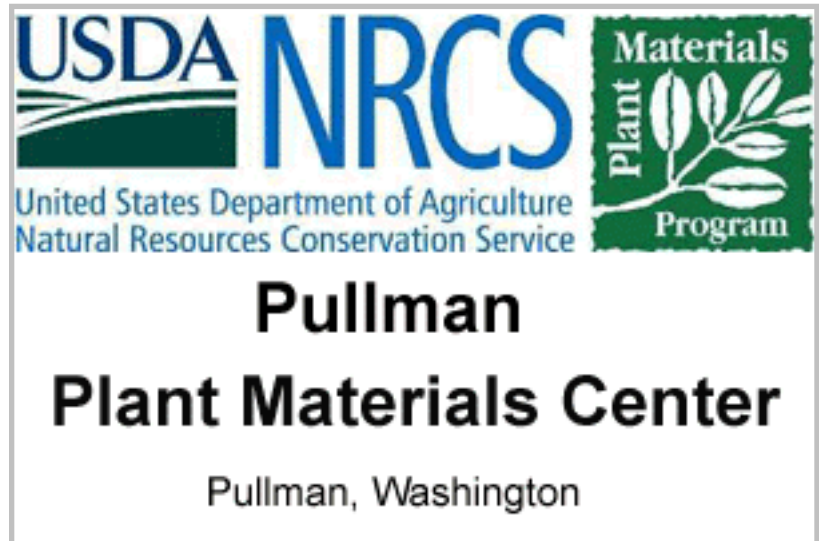


# Protocol Information

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Family Scientific Name: **Liliaceae**

Family Common Name: **lily**

Scientific Name: ***Calochortus nitidus* Dougl**

Common Name: **broad-fruit mariposa**

Species Code: **CANI**

Ecotype: **Source information is deliberately omitted to protect the population.**

General Distribution: **Endemic to grasslands and low meadows of extreme eastern Washington and adjacent northern Idaho. It is ranked S1 by the Washington Natural Heritage Program, S3 by the Idaho Conservation Data Center, and a "species of concern" by the US Fish and Wildlife Service under the Endangered Species Act.**

Known Invasiveness: **not invasive.**

Propagation Goal: **Seeds**

Propagation Method: **Seed**

Product Type: **Propagules (seeds, cuttings, poles, etc.)**

Stock Type: **field grown**

Time To Grow: **4 Years**

Propagule Collection: **Fruit is a capsule. Seed is beige in color. Seed is collected when the capsules begin to split in early to mid August and is stored in paper bags or envelopes at room temperature until cleaned.**

Propagule Processing: **Capsules are crushed by hand to release the seed. Coarse material is removed with a hand screen. Seed is cleaned with an air column separator. Seed is held in the center of the capsule between the wings and the wings must be broken crossways to extract the seed by hand.**

Pre-Planting Treatments: **Extended cold, moist stratification is needed. Cool spring temperatures may also be necessary. In trials at the PMC, seed sown in containers in late November or early December and left outside began emerging in mid-April. Seed stratified in petri dishes in a refrigerator at 5°C began germinating while still in stratification after 90 days. Germinated seeds sown in the greenhouse emerged but did not survive. Seed sown directly in the ground in early December began emerging in mid April.**

Growing Area Preparation/  
Annual Practices for Perennial Crops:

**Bulbs do not survive transplanting (Hitchcock et al 1969, Hitchcock & Cronquist 1973, Kruckeberg 1996). Propagation should only be attempted from seed sown directly in place. Sow seeds in late fall in a firm, weed free seedbed. Seed should be lightly covered to a depth of no more than 1/8 inch. Seed stratified artificially can probably be sown in very early spring, but care must be taken to avoid damage to any emerged radicles.**

Establishment Phase: **Weeds should be controlled by careful hand weeding while the weeds are in the seedling stage.**

Length of Establishment Phase: **1 growing season**

Active Growth Phase: **In subsequent seasons, weeds should again be controlled by careful hand weeding while the weeds are in the seedling stage to prevent damage to the young *C. nitidus* plants. Judicious early weeding is needed to reduce competition and ensure the survival of the plants. Non-reproductive plants will senesce in June and resume growing in early spring of the following year. A planting made in December 2002 had 74 plants emerge in April 2003. In 2004, 52 plants were present and all remained vegetative. In 2005 one plant flowered but produced no seed. In 2006, 44 plants remained and 11 flowered and produced seed. Work conducted by Caicco (1988) indicates the species is obligately outcrossed.**

Length of Active Growth Phase: **3-4 years**

Other Comments: **No insect or disease problems have been noted.**

**Deer will eat the flower buds and small rodents eat the leaf (Caicco 1989). Deer also eat the green capsules (personal observation). Pocket gophers eat the entire plant (Mancuso 1996).**

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